

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning on page 1, line 2 with the following new paragraph:

— This application is a ~~continuing~~ divisional application of U.S.S.N. 09/574,117, filed May 17, 2000, now U.S. Patent No. 6,620,584, which claims the filing date under 37 C.F.R. § 119(e) of U.S.S.N. 60/135,052, filed May 20, 1999. —

Please replace the section starting on page 6, line 6, with the following rewritten section:

— BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 (SEQ ID NOS: 1-14) depicts the sequence of 14 probes attached to beads.

Figure 2 is a graph depicting that 20% formamide elicits correct base identification at the terminal position, position 12, of immobilized probes. The star indicates the correct base identification.

Figure 3 is a graph depicting that the correct identification of the bases at position 11 and 12 (the terminal and terminal-1 positions) is achieved via competition using 20% formamide in the hybridization buffer.

Figure 4 is a graph depicting that the correct identification of the bases at internal positions (internal positions of the immobilized probes) is achieved via competition in the hybridization buffer.

Figures 5A (SEQ ID NOS: 1-4 and 15-22), 5B (SEQ ID NOS: 15-18), 5C (SEQ ID NOS: 19-31) schematically depicts 4 different probes each on its own bead, and solution target probes to interrogate different positions of the bead-bound probe. The symbols schematically depict different labels.

Figure 6 (SEQ ID NO: 32) depicts a method of using a DNA array to sequence.

Figure 7 (SEQ ID NO: 1) schematically depicts a decoding scheme. —

Please replace the paragraph starting on page 41, line 3, with the following rewritten paragraph:

— An example is illustrative of the system. An identifier probe comprises the sequence *ATCGATCGTACTAC* (SEQ ID NO: 33) with the primer being shown in italics and the first decoding position in bold. A first set of decoder probes is added, comprising *TAGCTAGCA*, *TAGCTAGCT*, *TAGCTAGCC* and *TAGCTAGCG*, with the priming sequence shown in italics and the decoding nucleotide underlined. Each of the decoding nucleotides comprises a detectable label distinguishable from the others, preferably a fluorophore as outlined herein. The first decoder probe, *TAGCTAGCA*, will hybridize more efficiently, and the signal from the A label will be more intense than the signal from the other three decoding probes. Thus, the first base of the identifier probe can be identified as a T. —

Please replace the paragraph starting on page 41, line 12, with the following rewritten paragraph:

— In a preferred embodiment, a second set of decoding probes is added. In this second round, the position of the second decoding position is shown in bold, *ATCGATCGTACTAC* (SEQ ID NO: 33). A preferred embodiment utilizes 16 decoding probes: 4 probes having the sequence *TAGCTAGCXA* (SEQ ID NO: 34), where X is either A, T, C or G; 4 probes having the sequence *TAGCTAGCXT* (SEQ ID NO: 35), where X is either A, T, C or G; 4 probes having the sequence *TAGCTAGCXC* (SEQ ID NO: 36), where X is either A, T, C or G; and 4 probes having the sequence *TAGCTAGCXG* (SEQ ID NO: 37), where X is either A, T, C or G. In a sense, the first decoding position then becomes part of the primer/priming sequence. In this case, the *TAGCTAGCAT* (SEQ ID NO: 38) probe will hybridize the most efficiently. This can be repeated for additional cycles. —

Please replace the paragraph starting on page 61, line 8, with the following rewritten paragraph:

— Targets

The target consists of the anchor's complement + 4 bases: 5'-dye-C CTC GAC C + XXXX-3' (SEQ ID NO: 39). The dye is attached to the 5' end of the probe. The target mixture contains all

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64 possible targets. Briefly: there are 4 solutions each containing 16 targets. Each of the 4(16) target solutions has a different dye label and the base applied at, e.g., 9 is known. Once the 4 target solutions are mixed (named, e.g., Mx9), the total target number is 64. —

Please insert the enclosed 16-page text entitled “SEQUENCE LISTING” immediately preceding the claims.